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Author(s): Vladimir Lagovskiy]

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Subslug: [Article by Vladimir Lagovskiy]

FULL TEXT OF ARTICLE: 1. [Article by Vladimir Lagovskiy]

2. [Text] ... On ``Flying Saucer''

3. For starters, let us acknowledge this fact. The rumors that the military industrial complex which actually owns the Scientific Production Association (NPO) of Experimental Machine Building is rather seriously interested in 'flying saucers'' are justified. I am looking at a document. It is entitled, 'A Protocol of the Test Results of an Exploratory Flying Vehicle Motion Method.'' At the top, as it should be, it is marked 'Concur' with a signature of the deputy commander of the military unit and an official seal. This is followed by the test date, test location, and the object of testing. And the purpose. As for the latter, it says that the experiments are carried out in order to assess the effect of moving a bulk high-T<inf>c<reset> superconductor under the effect of a fast electron flux on it according to a flying vehicle research program developed by the Scientific Production Association of the X and Y military units.

4. I am quoting these data in such detail not without reason. Stereotypes are still deeply embedded here. Many still think that if you have 'saucers,'' then you must have aliens. And if you have aliens, then it is garbage. Yet for a change, this is a rather serious affair. We are talking not about fantastic hypotheses but about a real breakthrough in technology and basic knowledge. The ''protocol'' is not a sole witness to this. There are also patents, authors' certificates, and patent and invention claims.

5. 'We are offering,'' says the senior fellow of the Scientific Production Association of Experimental Machine Building, Candidate of Technical Sciences Vasiliy Shabetnik, 'a principally new method of moving in space. And we can demonstrate it.''

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6. ...Here is the so-called 'Mohammed's tomb''-a saucer-shaped object from a cooled superconductor freely levitating in a magnetic field. Almost all developers of superconducting compounds used to ''experiment'' with this trick. As for the enthusiasts, it infused them with creativity. They thought that it would be possible to hover over the earth in the same way in some miracle vehicle. It is possible. There are no theoretical obstacles to this. Yet there is a problem: upon close examination, the generally sound idea runs into impenetrable technical difficulties.

7. For example, in order to ascend in the geomagnetic field of our planet, it is necessary to create an incredibly strong magnetic intrinsic field around the ``saucer.'' Yet this is far from simple even with superconductors. But let us assume that it is possible by some means; how shall we then move in space? There is a special problem with magnetic fields there.

8. The vehicle must be equipped with additional sustainer engines, the enthusiasts were explaining away. This of course is a way out...yet would the game be then worth the candles?

9. In other words, for reasons easy to understand, many experts thought such methods of travel to be rather hypothetical than real. And then they found a solution. A simple one, as a solution should be.

10. ... An experimental unit. A fast electron flux. It emerges from an accelerator and speeds past the superconductor model. So, the ''Mohammed's tomb'' instantaneously jumps to the side. Even the eye cannot catch its swift motion.

11. 'Now imagine a real space vehicle,'' Shabetnik says. Its airframe is covered with a high-T<inf>c<reset> superconductor. Fast electron emitters are installed circularly around it. The charged particles will be streamlining around the vehicle and by moving will create both a current and an electromagnetic field. So, the field and the current will be simultaneously induced in the superconducting layer. What will happen? The fields and the currents will begin to interact with Ampere's force. Simply speaking, their carriers will be repelled from each other. And this is undoubtedly more efficient than the interaction of a simple electromagnetic field of the vehicle with the earth's geomagnetic field. The vehicle will soar, as if floating in the electron medium which it itself created around itself.

12. The sphere is a perfect shape for interstellar travel. Yet for moving in an atmosphere, it is difficult to find anything better than the ``saucer.'' Consequently, it will probably be necessary to

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develop a variable-geometry device. Starting from the surface would require a rather modest outlay of electric force. About 100 A will be sufficient for a 5-ton vehicle. It would be also easy to maneuver it by increasing or decreasing the current along its sides.

13. ... From Superconductor

14. In essence, the scientists are suggesting an electromagnetic means of conveyance, albeit modified in principle. There is no doubt in the principle itself. But would it be possible to realize it in practice? We need superconductors. The best one-for -80°C-would suffice in space. The temperature there is much lower. Yet in the atmosphere, this threshold is insufficient.

15. 'Haven't you forgotten,'' Vladimir Dmitriyevich is musing, ''that we suggested a superconductor which maintains zero conductivity at 850°C?''

16. 'No, I haven't forgotten. But this is still in the exploratory stage. ''

17. 'Yes, exploratory. But quite real.''

18. Shabetnik and his colleagues are certain that they have discovered new fundamental patterns in the structure of matter. This knowledge enables them to explain the properties of matter differently from the way it has been done thus far-on the basis of the statistical and probabilistic concepts. They suggested a more natural approach.

19. For example, the researchers have demonstrated that the physical parameters of all elements depend on the quantity and state of the elementary particles in them. They also managed to establish the shape and structure of these building blocks. It turned out that in the physical world surrounding us, everything is subject to precise calculation: from the boiling point and entropy to superconductivity-a phenomenon discovered yet still not explained from the viewpoint of the old notions. And whenever precise calculation is possible, it is possible to design substances with given properties. Thus, the scientists at first theoretically predicted the existence of superconductors with a -80°C critical temperature. Then they developed it. And the result precisely confirmed the theory. And now there is a project for an 850° [superconductor] and there is no reason to doubt that it, too, will succeed.

20. ''I won't disclose all the secrets,'' Shabetnik says, 'but will give you a hint that the new superconductor can be based on plain iron. The trick is in the energy order of the remaining element

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position."

21. 'Okay, but what kind of fuel are you going to use to go into space?'' I collected myself to ask.

22. ... And Almost With Perpetual Motion

23. 'Will you put a nuclear or fusion reactor on the space vehicle? Or will you turn to the energy of the vacuum?''

24. 'Neither one of the three,'' Vasiliy Dmitriyevich responds. 'Do you recall another sensation which was trumpeted roughly at the same time as high-temperature superconductivity? It was reported that the so-called ''cold fusion' was discovered in the United States. Then this phenomenon was replicated in many laboratories throughout the world. That it was replicated yet again could not be explained. And why? Simply because they were trying to find the features of fusion reactors where they couldn't be found.

25. 'I remember these experiments vividly. I even observed one of those at Moscow State University. A jar with heavy water, two live electrodes, and all of a sudden, additional heat, as if from nowhere. And if its source is not 'cold fusion,' then what was it?

26. 'We call this phenomenon 'energy conversion.' And the jar itself is a primitive converter model. Water boils in it. Using the scientific language, we are dealing with a phase transition. Yet in this case the water particles are moving in an orderly fashion due to an electric field. And in such cases, according to our theory, phase transitions result in an increase in the energy release. The gain is some 2.12-4.2 times greater than the work spent.

27. 'Wait a second, wait a second,'' I am trying to interrupt what I have just heard, ''Are you talking about perpetual motion?''

28. 'No, we are talking about extracting the inner energy of the matter.''

29. 'And can it be used in any way?''

30. 'Be my guest. You can even design power plants instead of the traditional ones. Yet I must repeat that it would be an extremely primitive one-boiling water...and of course, such a converter is not suitable for space flights.

31. 'We have already found an electrical analog of the processes during which energy conversion occurs'', Shabetnik continues. 'And it can be extracted not from water but from, say, metal. Suppose you

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plug our converter into an electric generator. So on the output you produce four times as much energy as it can generate operating in a traditional fashion. You use one-quarter of that for generator power supply and the remainder is available to you as a gift from the microcosm.''

32. Yet in reality, of course, everything is a lot more complicated. In essence, the energy converter consists of several simultaneously operating devices. Its principal elements are a closed superconductor and a control system. This is for terrestrial needs. But the electron accelerator connected into the circuit turns the converter into a space propulsor. Using it, one can reach the Alpha-Centaurus and return back to earth in 12 years.

33. 'Have you been able to replicate these processes at least experimentally?''

34. 'Yes. Otherwise I wouldn't be telling you anything. In our estimates, the energy concealed in 1 kilogram of iron is quite sufficient for an interstellar journey.''

35. Well, the outlook is, shall we say it, quite fantastic. Even without flying to other worlds. After all, the energy converters will be quite suitable for earthly needs. It's about time to start dreaming not only about miracle generators capable of replacing nightmarish nuclear and fossil fuel power plants, but also about new means of conveyance. All our lives could be changed dramatically...

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